Sept. 13, 1932. W. F. STOODY 1,876,786

ELECTRODE HOLDER

Filed July 8, 1930

Fig. 1.

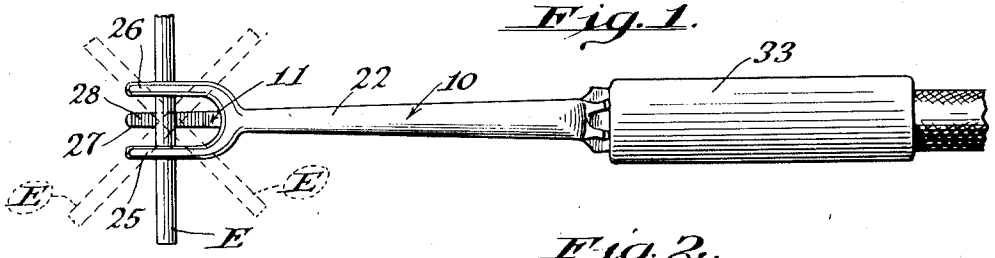


Fig. 2.

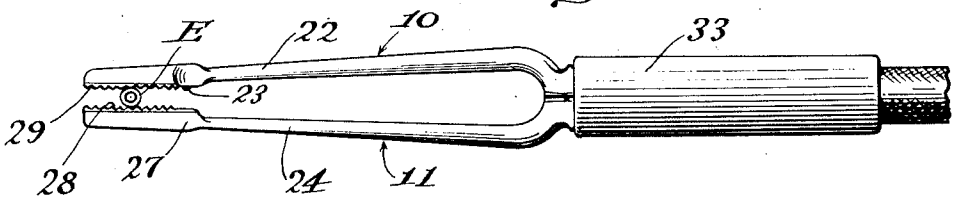


Fig. 3.

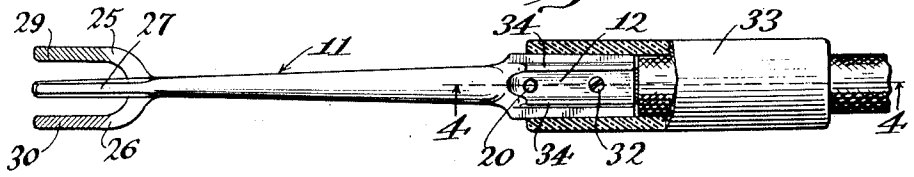


Fig. 4.

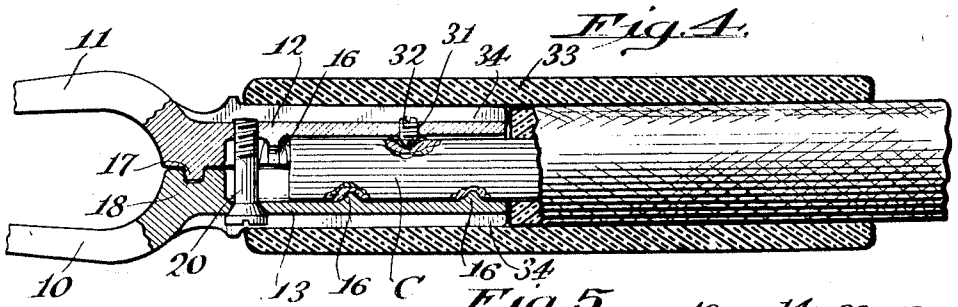


Fig. 5.

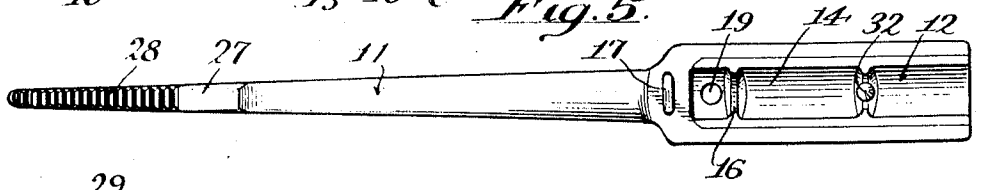
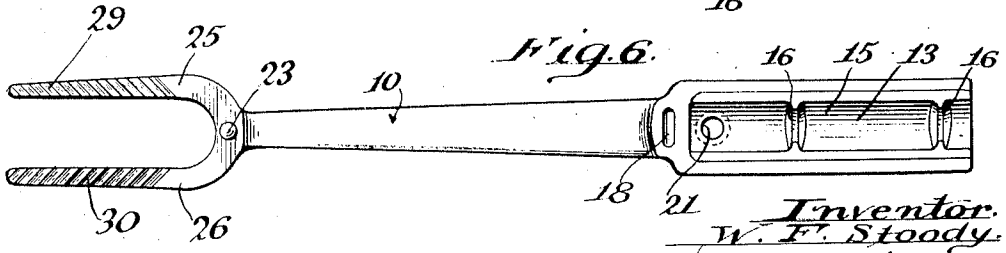


Fig. 6.



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UNITED STATES PATENT OFFICE

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ELECTRODE HOLDER

Application filed July 8, 1930. Serial No. 466,461.

This invention relates to improvements in electrode holders and may be considered an improvement of the construction described in the application filed by Shelley M. Stoody, Serial Number 371,991, dated June 19, 1929.

An object of this invention is to provide an improved electrode holder having a tubular insulating handle into which the body of the electrode holder is inserted. The body of the electrode holder has a longitudinally divided shank which has its sections so formed as to receive between them the end of an electrical conductor or cable. The sections of the body are so formed that when they are assembled together, the arms carrying the gripping jaws will be placed under an initial tension thus causing the jaws to grip firm upon small electrodes as well as large electrodes.

Another object of the invention is to provide an improved electrode holder having arms carrying jaws with the arms placed under initial tension and being of tapered form so that the spring or bend in the arms, when the jaws are separated by an electrode, will be uniformly distributed.

A further object of the invention is to provide an electrode holder having a body formed of assembliable sections and to provide a novel construction for holding the sections in assembled relation.

Still another object of the invention is to provide an electrode holder having a shank so formed as to provide a socket to receive the end of a cable or electrical conductor and to provide a point set screw threaded and mounted on the shank which can be screwed into the cable or conductor to establish a good electrical connection between the conductor and the shank and assist in holding the conductor and the shank against separation.

Another object of the invention is to provide an electrode holder having opposed jaws adapted to grip upon an electrode and to so form the face of the jaws that the electrode may be effectively held between the jaws in any desired position.

With the foregoing and other objects in view which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawing for an illustrative embodiment of the invention, wherein:

Fig. 1 is the top plan view of the improved electrode holder.

Fig. 2 is a view in side elevation of the same.

Fig. 3 is the bottom plan view of the electrode holder part of the tubular handle being broken and shown in section.

Fig. 4 is a longitudinal vertical section through the holder illustrating details of construction and being on an enlarged scale.

Fig. 5 is a view in elevation of one of the parts of the body of the electrode holder.

Fig. 6 is a view similar to Fig. 5 illustrating the other part of the body.

Referring to the accompanying drawing, wherein similar reference characters designate similar parts throughout, the improved electrode holder comprises the body formed of two parts 10 and 11. These parts have base portions 12 and 13 which cooperate together to form a shank for the body. The opposed faces of the shank portions are convex in form as indicated at 14 and 15. These faces are traversed by transverse ribs 16. Part 11 adjacent the forward end of its shank portion is provided with a projection 17 adapted to enter a corresponding recess 18 in part 10 to hold the parts against relative longitudinal displacement. Part 11 is also provided with a threaded aperture 19 to receive screw 20 which is extended into aperture 21 in part 10.

The formation of the two parts of the body is such that when the parts are assembled and the screw 20 is tightened, the outer end of arm 24 in part 11 is urged against the heel, or small projection 23, on the outer end of arm 22 thus placing the arms under initial tension. The arms 22 and 24 taper outwardly so that the spring or bending of the arms upon the insertion of an electrode will be uniformly distributed.

The outer end of arm 22 is forked and bifurcated providing tines 25 and 26. The forward end of arm 24 is provided with a finger

27 arranged in opposition to the tines and between them. Finger 27 forms one jaw of the holder while the tines 25 and 26 form the opposite jaw.

As clearly shown in Figures 5 and 6, the finger 27 has its face provided with a plurality of transversely extending grooves or serrations 28. The opposed face, or tine 25, is likewise provided with a plurality of oblique grooves or serrations 29. These serrations are oblique in one direction and similar serrations 30 on tine 26 are oblique in the opposite direction. The purpose of these serrations will be hereinafter more fully explained.

A threaded aperture 31 is formed in one of the shank sections and through one of the ribs 16. This aperture receives a pointed set screw 32 which can be tightened into the electrical conductor or cable "C". The tightening of this pointed set screw causes its point to be burnished or cleaned so that when it is tightened into the conductor, a good electrical connection between the cable and the shank is assured.

A tubular handle 33 formed of insulating material such as hard rubber or the like, is provided which slips on to the shank. Small ribs 34 may be formed on the exterior of the shank which are slightly tapered so that the tubular handle 33 can be driven on to the ribs and held in place thereon. As the tubular handle is in length about twice as great as the length of the shank, it serves to enclose the end of the cable or conductor.

The object and advantages of the improved electrode holder are as follows:

In assembling the electrode holder, the two parts of the body are brought together with the shank portions against opposite sides of the end of the cable "C". The screw 20 is then inserted and, on being tightened, forces the ribs 16 into the cable and draws the arms 22 and 24 into engagement placing them under initial tension. Set screw 32 is then tightened to establish the good electrical connection and the tubular handle, which has been previously slipped on to the cable, is then driven on to the shank. The electrode "E", which may be any suitable welding rod, can then be forced between the jaws this being usually accomplished by using the welding rod as a lever to pry the jaws apart sufficiently to permit the welding rod to be thrust between the jaws. When the welding rod is in position between the jaws, it may be caused to assume any desired position. When it is in the position shown in full lines upon Fig. 1, the welding rod partially fills one of the transverse serrations 28 and lies across the oblique serrations 29 and 30. The transverse serrations thus partially receiving the welding rod hold it firmly in such position. The welding rod may be forceably moved, however, between the jaws and if moved only a slight amount from the position shown, it then partially occupies one of the grooves 28 and partially occupies one of either of the oblique serrations 29 and 30. Being thus partially within two grooves, the two grooves will cooperate to hold the welding rod in the adjusted position.

If the welding rod is moved further into either of the dotted line positions indicated in Fig. 1, it will then partially fit in one of the oblique serrations lying across the other set of oblique serrations and across the transverse serrations or grooves 28. By thus lying within one groove of an oblique set, it will be effectively held thereby in such dotted line position.

From the above described construction, it will be appreciated that a simple and novel and advantageous electrode holder is provided which may be easily, simply and cheaply manufactured and which may be easily and quickly assembled or disassembled.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. An electrode holder having a longitudinally divided shank, the sections of which present opposed surfaces between which a conductor may be positioned, means carried by the shank adapted to grip and hold an electrode, and threaded means for tightening the sections together.

2. An electrode holder having a longitudinally divided shank, the sections of which present opposed surfaces between which a conductor may be positioned, means carried by the shank adapted to grip and hold an electrode, and threaded means for tightening the sections together, said sections being of substantially equal length.

3. An electrode holder having a longitudinally divided shank, the sections of which present opposed surfaces between which a conductor may be positioned, means carried by the shank adapted to grip and hold an electrode, said sections having engaging portions at the forward ends of the shank portions, and means arranged behind said engaging portions for fastening the sections together.

4. An electrode holder having a longitudinally divided shank, the sections of which present opposed surfaces between which a conductor may be positioned, means carried by the shank adapted to grip and hold an electrode, threaded means for tightening the sections together, and an insulating tubular handle adapted to be slipped on the shank.

5. An electrode holder having a longitudinally divided shank, the sections of which present opposed surfaces between which a conductor may be positioned, means carried by the shank adapted to grip and hold an electrode, threaded means for tightening the sec-

tions together, said sections being of substantially equal length, and an insulating tubular handle adapted to be slipped on over the shank.

6. An electrode holder having a longitudinally divided shank, the sections of which present opposed surfaces between which a conductor may be positioned, means carried by the shank adapted to grip and hold an electrode, said sections having engaging portions at the forward ends of the shank portions, means arranged behind said engaging portions for fastening the sections together, and an insulating tubular handle adapted to be slipped on over the shank.

7. An electrode holder having a shank providing a socket adapted to receive a conductor, means carried by the shank adapted to grip and hold an electrode, a set screw threadedly mounted on the shank adapted to be screwed into the conductor to establish a good electrical connection between the shank and the conductor and assist in holding the conductor and shank against separation, and a tubular insulating handle adapted to be positioned on the shank to substantially inclose and protect it, said handle when in applied position covering over the head of the set screw.

8. An electrode holder having a shank longitudinally divided into sections, means carried by the shank adapted to grip and hold an electrode, said sections presenting opposed concave faces between which a conductor is adapted to be positioned, there being transverse ribs formed on the faces adapted to bite into the conductor, and means for holding the sections together.

9. An electrode holder having a shank longitudinally divided into sections, means carried by the shank adapted to grip and hold an electrode, said sections presenting opposed concave faces between which a conductor is adapted to be positioned, there being transverse ribs formed on the faces adapted to bite into the conductor, means for holding the sections together, and a set screw threaded into one of the sections and through a rib thereon adapted to be screwed into the conductor as and for the purpose described.

10. An electrode holder having a longitudinally divided shank, means carried by the shank adapted to grip and hold an electrode, there being a projection at the forward end of one section of the shank fitting into a recess in the other section of the shank, and a screw serving to detachably connect the sections of the shank together.

11. An electrode holder having a longitudinally divided shank, means carried by the shank adapted to grip and hold an electrode, there being a projection at the forward end of one section of the shank fitting into a recess in the other section of the shank, a screw serving to detachably connect the sections of the shank together, and a tubular insulating handle receivable over the shank.

12. An electrode holder having opposed jaws adapted to grip upon an electrode, there being transverse serrations formed on one jaw and oblique serrations formed on the other jaw as and for the purpose described.

13. An electrode holder having one forked jaw and an opposed finger jaw arranged between the tines of the forked jaw, one jaw having transverse serrations and the other jaw having oblique serrations as and for the purpose described.

14. An electrode holder having one forked jaw and an opposed finger jaw arranged between the tines of the forked jaw, the finger jaw having transverse serrations thereon, one tine of the forked jaw having oblique serrations in one direction and the other tine of the forked jaw having oblique serrations in the opposite direction as and for the purpose described.

In testimony whereof I have signed my name to this specification.

WINSTON F. STOODY.